ASSIGNMENT 5

Textbook Assignment: "Fiber Optics and Lighting Systems," chapter 6, pages 6-9 through 6-50; "Electrical Equipment," chapter 7; "Alarm Systems," chapter 8.

5-1. In street lighting, streets are classified into how many categories?

1. Five
2. Two
3. Three
4. Four

5-2. Which of the following measurements should NOT be used as a mounting height for a lighting luminaire?

1. 18 feet
2. 20 feet
3. 25 feet
4. 30 feet

5-3. A luminaire overhang should not exceed what percentage of its mounting height?

1. 25%
2. 30%
3. 35%
4. 40%

5-4. What technical information does a luminaire utilization curve show?

1. The distribution of illumination on the road surface in the vicinity of the luminaire
2. The amount of light generated within the luminaire
3. The amount of light that falls on the roadway and adjacent areas
4. The magnitude and direction of light coming from the luminaire

5-5. What technical information does a luminaire isofootcandle curve show?

1. The distribution of illumination on the road surface in the vicinity of the luminaire
2. The amount of light generated within the luminaire
3. The amount of light that falls on the roadway and adjacent areas
4. The magnitude and direction of the light coming from the luminaire

5-6. When performing lighting calculations, what factor should you include to compensate for the gradual loss of illumination that is due to accumulated dirt on the luminaire surface?

1. Power factor
2. Correction factor
3. Maintenance factor
4. Illumination factor

5-7. Floodlighting luminaries have what total number of National Electrical Manufacturer's Association (NEMA) classifications?

1. Five
2. Two
3. Three
4. Four

5-8. A general-purpose floodlight, with an integral ballast, has what NEMA classification?

1. GP
2. GPB
3. HD
4. HDB

5-9. A NEMA Type 5 floodlight has a horizontal and vertical beam spread of how many degrees?

1. 21
2. 22
3. 45
4. 77

5-10. You are performing lighting calculations and the manufacturer's information is not available for an enclosed floodlight. What maintenance factor should you use in the calculation to compensate for the gradual loss of illumination?

1. 0.76
2. 0.70
3. 0.65
4. 0.55

5-1 1. What types of airfield is/are best suited for helicopter operations?

1. VTOL
2. VSTOL
3. Both 1 and 2
4. SELF

5-12. What type(s) of airfield can accommodate the landing of high-performance aircraft?

1. VSTOL
2. SELF
3. EAF
4. Both 2 and 3

5-1 3. What airfield lighting standards are followed by U.S. military airfields overseas?

1. NAVFAC standards
2. The host nation's aviation standards
3. FAA standards
4. U.S. Air Force standards

5-14. The SELF has how many sets of FLOLS and field lighting systems?

1. Five
2. Two
3. Three
4. Four

5-15. In an airfield lighting control circuit, the hot lead is what size of wire?

1. No. 6 AWG
2. No. 7 AWG
3. No. 12 AWG
4. No. 17 AWG

5-16. In an airfield lighting control circuit, what color is the hot lead?

1. Red
2. Blue
3. Black
4. Orange

5-17. Runway edge lights should be installed at what maximum distance from the edge of the runway paving?

1. 5 feet
2. 2 feet
3. 10 feet
4. 15 feet

5-18. When approach lighting circuits are to be installed above ground and the airfield area is not fenced, the circuit should be installed at what minimum height?

1. 8 feet
2. 10 feet
3. 12 feet
4. 22 feet

5-19. The power supply for a runway distance marker light should be the same as the power supply for approach lights.

1. True
2. False

5-20. In an obstruction lighting system, what color are the lights?

1. Orange
2. Yellow
3. Blue
4. Red

5-2 1. There are how many types of functional beacons?

1. Five
2. Two
3. Three
4. Four

5-22. Which of the following beacons uses a flashing light instead of a rotating light?

1. Airport beacon
2. Identification or code beacon
3. Hazard or obstruction beacon
4. Both 2 and 3

5-23. When you are working very near airfield strobe lights during an airfield operation, what safety precaution should you follow?

1. Wear sunglasses
2. Do not look directly at the light beam
3. Cover the strobe lights to block their light
4. Turn off the power to the strobe lights

5-24. When, if ever, does the control tower have any control over the airfield strobe lighting?

1. Only when the local/remote control unit in the sequence timer cabinet is in the local-on position
2. Only when the local/remote control unit in the sequence timer cabinet is in the remote position
3. Never

5-25. When you are performing an operational test during routine maintenance on an airfield lighting system, you should leave the light on for at least how many hours?

1. 1
2. 2
3. 6
4. 4

5-26. What will happen in an airfield lighting circuit when the output terminals of a constant-current regulator (CCR) in the circuit are accidentally shorted?

1. The circuit will be overloaded
2. There will be a short circuit
3. The CCR will have a no-load condition
4. The CCR will be damaged

5-27. What will happen to a CCR in a lighting circuit if its secondary terminals are left open without a load?

1. It will be overloaded
2. It will be shorted
3. It will have a no-load condition
4. There will be no significant effect to the CCR

5-28. NEW® requirements for motor-branch circuit and ground fault protection can be found in what part of Article 430?

1. A
2. B
3. C
4. D

5-29. Motor-branch circuit protection must protect which of the following circuit components?

1. The motor
2. The control apparatus
3. The conductors
4. All of the above

5-30. Which of the following devices can be considered a motor controller?

1. Pilot control device
2. Circuit breaker
3. Push button station
4. Limit switch

5-31. The NEC® considers a motor controller to be out of sight when the controller is more than how many feet from the motor?

1. 10
2. 15
3. 25
4. 50

5-32. An approved disconnecting means for a motor circuit should have what kind of rating?

1. Ampere
2. Horsepower
3. Kilowatt
4. Voltage

5-33. The Code permits a motor disconnecting means to be out of sight if what condition can be met?

1. It can be locked in the ON position
2. It can be locked in the OPEN position
3. It can not be locked in the ON position
4. It can not be locked in the OPEN position

5-34. A motor overload protection should be capable of protecting the motor from which of the following circuit condition(s)?

1. Short circuit
2. Ground fault
3. Excessive circuit heat
4. All of the above

5-35. What must be done to a regular fuse used as an overload protection for a motor during the motor's starting period?

1. It must be grounded
2. It must be shunted
3. It should be outfitted with a time-delaying device
4. None of the above

5-36. Which of the following non-current carrying metal parts of a motor circuit is/are required to be grounded?

1. Cabinets
2. Boxes
3. Equipment enclosures
4. All of the above

5-37. Flexible metal conduit is permitted to be used as an equipment grounding conductor provided its length does not exceed how many feet?

1. 6
2. 10
3. 15
4. 20

5-38 When flexible metal conduit used as a grounding conductor exceeds its permitted length, you should install what component in the conduit?

1. A neutral wire
2. An additional hot wire
3. A bonding jumper wire
4. A connector listed for grounding

5-39. A flexible metal conduit used as an equipment grounding conductor should have circuit conductors within it rated at what maximum amperes?

1. 10
2. 15
3. 20
4. 25

5-40. A control circuit is divided into how many classes?

1. Five
2. Two
3. Three
4. Four

5-41. In a class 1 control circuit, a number 18 wire should be protected at how many amperes?

1. 7
2. 10
3. 16
4. 18

5-42. In a two wire control circuit, what component opens and closes the circuit?

1. Circuit breaker
2. Start-stop button
3. Toggle switch
4. Automatic pilot device

5-43. In a three-wire control, what is the function of the maintaining circuit?

1. To maintain the voltage of the circuit
2. To maintain the current of the circuit
3. To maintain power to the circuit
4. To eliminate the need for the operator to press constantly on the start button to keep the controller coil energized

5-44. Which of the following is another term for a maintaining circuit?

1. Control circuit
2. Sealing circuit
3. Holding circuit
4. Both 2 and 3

5-45. Which of the following components is commonly used to open and close the circuit?

1. Limit switch
2. Circuit breaker
3. Push button station
4. Float switch

5-46. A low-voltage control uses a separate low voltage source from which of the following components?

1. Adjustable resistor
2. Rectifier
3. Isolation transformer
4. Small generator

5-47. The low-voltage control's supply voltage should come from the same power supply as the motor it is controlling.

1. True
2. False

5-48. Lockout guidance is provided by what instruction?

1. OPNAVINST 5010.23
2. OPNAVINST 5001.23
3. OPNAVINST 5100.32
4. OPNAVINST 5100.23

5-49. If a motor does not start when the main contacts of the controller close, which of the following conditions is/are the possible cause(s)?

1. Dirty start button contacts
2. Open holding coil
3. Open overload heater coil
4. Each of the above

5-50. If the controller contacts do not close when the start button is pressed, which of the following conditions is a possible cause?

1. Defective load
2. Grounded circuit
3. Over voltage
4. Shorted coil

5-51. If the controller contacts open when the start button is pressed, which of the following conditions is a possible cause?

1. A shorted coil
2. Wrong connection of the push button station
3. Over voltage
4. An open overload relay

5-52. If a magnetic coil is noisy while in operation, which of the following conditions is a possible cause?

1. Shorted contacts
2. Shorted coil
3. Grounded coil
4. Broken shaded pole

5-53. Grease used for lubricating motor bearings should have a melting point not less than how many degrees?

1. 150°F
2. 212°F
3. 100°C
4. 150°C

5-54. What is the most common lubrication problem on newer motors?

1. Infrequent greasing
2. Overgreasing
3. Undergreasing
4. Grease melting

5-55. When using an external heating unit to dry moisture from a Class A insulated motor, you should not allow the motor windings to exceed what temperature?

1. 150°C
2. 100°C
3. 150°F
4. 100°F

5-56. What condition indicates an overheated commutator?

1. A polished brown color on the surface of the commutator
2. A bluish color on the surface of the commutator
3. An uneven wear on the commutator
4. A worn out commutator brush

5-57. After you install an electric motor, how long should you initially leave the motor running with a load for observation?

1. 1 hour
2. l/2 hour
3. 5 minutes
4. 15 minutes

5-58. Which of the following reasons is/are the purpose of a building alarm system?

1. To protect property
2. To detect an intrusion
3. To protect life
4. All of the above

5-59. What is an annunciator?

1. A public address system
2. An audible indicating device
3. A visual indicating device
4. A coding device

5-60. What Article in the NEC® covers the installation of wiring and equipment of fire-protective signaling systems?

1. 607
2. 670
3. 706
4. 760

5-61. In a security wiring circuit, what component allows an authorized person to leave and enter the premises without causing an alarm when the system is on?

1. Tamper switch
2. Key-operated timer
3. Shunt lock
4. Tuner switch

5-62. Which of the following types of installation for fire and security wiring systems is the most difficult to accomplish in an existing building?

1. Surface mounted conduit
2. Wire molding
3. Concealed wiring
4. Exposed wiring

5-63. Which of the following drills is recommended for drilling holes using a flexible shaft?

1. Low-speed
2. High-speed
3. High torque
4. Reversible

5-64. In the installation of burglar alarm wiring through a window casement, what size of flexible shaft is recommended?

1. l/4 inch
2. 5/16 inch
3. 3/8 inch
4. l/2 inch

5-65. While pulling a wire with a flexible shaft attached to a drill, when, if ever, should you reverse the direction of the drill?

1. All the time while pulling the wire
2. Only when the wire is hard to pull
3. Only when the bit is passing through a wooden member
4. Never

5-66. Security and fire alarm systems' wiring ranges from what AWG sizes?

l. No. 10 to No. 8
2. No. 14 to No. 12
3. No. 20 to No. 16
4. No. 22 to No. 18

5-67. What component is the heart of any security system?

1. Bell
2. Horn
3. Control panel
4. Switchboard

5-68. A good rechargeable power supply should be able to operate an alarm system for how many hours without being recharged?

1. 8 hours
2. 12 hours
3. 24 hours
4. 48 hours

5-69. A non-rechargeable standby battery power supply for fire alarms is still permitted for use by the NFPA.

1. True
2. False

5-70. Surface magnetic detectors can be mounted by using which of the following materials?

1. Epoxy
2. Double-sided tape
3. Screws
4. All of the above

5-71. When installing a detector on windows, the two sections of the detector should be no more than how many inches apart?

1. 1/4 inch
2. 3/8 inch
3. l/2 inch
4. 5/8 inch

5-72. The conductive foil in an alarm system is connected to what conductor?

1. Neutral
2. Ground
3. Positive
4. Negative

5-73. What type of motion detector is used to detect sounds caused by an intruder?

1. Infrared detector
2. Ultrasonic detector
3. Sound wave detector
4. Audio detector

5-74. Which of the following detectors is used to protect large areas such as construction sites?

1. Infixed
2. Audio
3. Microwave
4. Vibration

5-75. The proper performance of an ultraviolet-radiation fire detector could be affected by which of the following factors?

1. Sunlight
2. Welding arc
3. Lightning
4. Both 2 and 3